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INTERROGATION OF GEORGE RUCKHEIM.

Attached is a report prepared by A.F.S. Europe on the interrogation of George RUCKHEIM, former member of the G.A.F. Signals Intelligence Organisation, carried out by the Assistant TICOM representative at GOETTINGEN on 15th-17th February, 1949.

Ticom.
31st May, 1949

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REPORT OF INTERROGATION OF GEORGE RUCKHEIM.

1. Clearance to interrogate Ruckheim at his home in Göttingen was received from British authorities on 7 February and interrogation was carried out by the Assistant TICOM Representative during the period 15-17 February 1949.

2. It was found that Ruckheim, at present in the last semester of his medical course at the University of Gottingen, is living with Herr Karl Schraplau, a former technical officer on Ruckheim's staff and now the owner of a photography business in Gottingen. The interviews were held with both men simultaneously and Schraplau was able to answer some technical questions on communications that Ruckheim himself had not been concerned with. After the original contact with Ruckheim had been made by Mr. Hudson of the British 81st Intelligence Team, the entire interrogation was carried out by the Assistant TICOM Representative at Schraplau's home. This was done at the request of Ruckheim as a means of saving his time, which was limited, and also because he preferred not to visit the British Intelligence Headquarters too frequently.

3. Both Ruckheim and Schraplau were extremely co-operative though evidencing considerable curiousity as to how their names had come to the attention of the American authorities and why they were being interviewed by an American rather than a British Representative. It was necessary to reassure Ruckheim several times that the interview was being carried on with the knowledge and approval of the British authorities and was in no sense clandestine. It was also necessary to assure both men that the results of the interview would be highly classified, would not be published at any time, and particularly would be kept from Soviet hands. Gottingen is only five kilometers from the Soviet zone frontier, and its inhabitants believe that there is a great deal of agent activity going on in the area, and are naturally apprehensive.

4. In contrast to the usual German signal intelligence personality, whose first statement is generally a request for Allied employment, both Ruckheim and Schraplau made it clear from the start that they sought nothing in return for their information. Both men were now established in their respective fields of interest, and had no intention of returning to signal intelligence for any employer. They felt, however, that, in view of their backgrounds, they would have no alternative if their area should be overrun by the Soviets or succumb to a Communist government.

5. Organization: In regard to the organization of the signal intelligence service of the German Air Force, both men disclaimed extensive knowledge of the composition of the headquarters at the Marstall in Berlin. They knew, only in a general way, of its breakdown by sections, of its subordination to the signal service of the Air Force under General Martini, and that it conducted some cryptanalytic research. Of the results of the latter they claim to know nothing except that Ruckheim, during his wartime visits to Berlin, had been told that the German Air Force was always current in its reading of Russian air traffic. Ruckheim, who regarded himself

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as a tactical or "field" man, expressed a very low opinion of the personnel and organization of the Marstall, referring to them as "bureaucrats" interested more in their personal advancement and feuds than in the production of intelligence. He claimed further that the only time Headquarters ever had any other than routine contact with his organization was when they were trying to prevent him from taking some necessary measure. In this connection, it was only the authority of Goering himself, who took a close personal interest in Ruckheim's work, that prevented his removal by his irate superiors in Berlin.

6. As for the organization of the field units, Ruckheim stated that the units varied widely according to their mission and that he was personally familiar only with his own battalion, the "Reich Verteidigung" (Reich Defense). The details of the organization of the battalion escaped his memory both because of the lapse of time and also because he had not concerned himself particularly with administration but with operations. In any event, both Ruckheim and Schraplau agreed that the official table of organization for the unit bore little resemblance to the actual operating unit. The latter was extremely flexible and was continuously altered to meet changing conditions. The average number of persons employed varied between 700 and 800, counting direction finding stations. Some personnel were on duty for a 12 hour shift, but intercept operators were used for only eight hours. Ruckheim stated his opinion that had he had enough operators he would have used a six hour shift as he believed that more than that dulled a man's perceptivity. Schraplau stated he believed the unit had had about 500 receivers altogether, but doubted that more than 300 had even been in use at one time.

7. The heart of the unit was the reporting center (Meldekopf). The center was under Ruckheim's command, as part of the battalion, and received reports from a number of technical sources such as radar stations, as well as signal intelligence reports. The center did not receive reports from civilian or military spotters, as such information was of practically no value. By far the most valuable material came from signal intelligence, and both men agreed that ground radar, for the Germans at least, was completely ineffective both because of the ease with which it could be thrown off by "silber Streif" (aluminum foil or "window") and because radar could only report current activity and did not indicate intent as did signal intelligence.

8. The actual intercept and direction finding were carried out by operators who specialized in the particular nets that they covered. Certain operators were detailed for British or American bomber traffic, fighter traffic, air field traffic, etc. The general rule was to let a man specialize and then give him free rein in his speciality. Intercept missions were assigned by battalion headquarters rather than by Berlin, and for the last years of the war scarcely varied. First priority went to tactical bomber traffic, then in decreasing order to fighter nets, ground-to-ground nets, training traffic

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(which was thought very highly of for long range planning purposes) etc. American ferry traffic was followed for a time but was later dropped for missions of higher priority. Training traffic in the United States was easily monitored, according to Ruckheim, and furnished valuable early clues as to American procedure, tactics, and state of readiness. Intercept operators were frequently sent up in planes to monitor traffic that could not be conveniently reached from the ground.

9. Communication between intercept points and the reporting center and between the center and the Fighter Command was largely by telephone, using cover names and code words which were changed daily. Teletype was used to some extent, particularly for traffic from the center to Fighter Command or to higher headquarters such as Air Fleet or Luftwaffe headquarters in Berlin. Cipher teletype was used for tactical traffic, with messages of the highest classification of secrecy being enciphered by the Enigma. Three or four cables were taken over from the Reichpost for this purpose.

10. Radio telephone communication was used extensively between intercept and direction finding units because of the scattered locations of these installations ranging all the way from Norway to France. The 10 centimeter band was used, and a sort of radio deception program was in effect whereby false D/F commands would be frequently given and false reports sent back.

11. Operations: In operations as in administration, Ruckheim and Schraplau were more concerned with their field unit than with higher headquarters. They either did not know of or thought of no importance the work carried on in the Marstall. According to both men, the only operational contact with their Berlin headquarters was a monthly summary of evaluated traffic which was sent by mail and which they believed had been filed away without further study. No raw traffic or any day-to-day traffic analysis was sent to the headquarters. No missions were received, nor, so far as either man could recall, any cryptanalytic solutions. (This is only of their own unit that they speak).

12. Traffic analysis was done at battalion level and was utilized locally. It was thought of very highly and was made the keystone of the early warning service. Of particular interest to the Luftwaffe were patterns of bomber traffic. It was possible by charting traffic volume (which the Germans called "intensity") to predict raids many hours in advance. The Germans learned by experience that different types of operations had different patterns which served as a very reliable guide. Ruckheim claimed that the air operations which were a part of the Invasion in 1944 were accompanied by a characteristic traffic pattern, the same pattern which had been noted at the time of the Dieppe raid. He believed that no radio deception plan could long succeed in suppressing characteristics of so large an operation.

13. Cryptanalysis was also done at battalion level. Ruckheim had a team of four cryptanalysts who had been trained at the Marstall and sent to his unit. The only system that Ruckheim remembers reading was the "Bomber Code" which was known under its initials as "BC". He

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claimed that this was read currently and both British and American units used it extensively in air-to-ground and air-to-air traffic. Enciphered weather traffic was also read, and both men asserted that the German weather service relied on their unit to furnish deciphered weather traffic before the Germans issued their own weather forecast. Ruckheim did not remember whether any other systems were read, although he knew that administrative traffic from air fields in England was monitored and read. He did not remember whether this had been enciphered although he supposed it had been.

14. The Germans monitored and were much interested in Allied radar, both ground and airborne. Schraplau, who seemed to know more about radar, stated that every ground radar station in England had been pin-pointed. To monitor some of these stations it was necessary to set up receiving sites deep in Europe so as to take advantage of the reflected wave. Some of these radar monitoring sites were as far east as Russia. Airborne radar was continuously monitored during raids and constituted one of the most useful means of tracking planes. Automatic identification devices such as IFF (Identification Friend or Foe) were frequently left on by Allied fliers, particularly Americans, and were very valuable to the Germans. Ruckheim stated that the very heavy losses suffered by the Americans during the Schweinfurt raid were due to their carelessness with this device. Direction finding beams set up to guide planes to a target were also monitored.

15. Direction finding, both for radio traffic and radar, was of primary importance in tracking Allied flights on their routes. When the intercept station at the reporting center picked up a flight, the watch officer at the center automatically took over control of the D/F net and a signal was flashed to outlying stations along the D/F base. There were always a large number of these stations set up at any one time, as Ruckheim explained that local conditions frequently prevented quick reception and recognition of the desired signal. The Allied system of using fixed, crystal-controlled channels for air traffic aided D/F operations enormously, as the Germans were able to make special D/F receivers using crystals captured from fallen planes. The use of Allied crystals considerably lessened the problem of getting all receivers promptly lined up on the correct band. The Germans used letters to represent the various channels available to Allied planes, varying the letters regularly, and the procedure was to flash the correct letter along with the alert signal to the D/F sites. In a very short interval the bearings would be received and plotted. Schraplau, who aided in the construction of the crystal-controlled D/F receivers, claimed that, because of the brevity of messages passed, accurate direction finding of moving aircraft would have been extremely difficult if not impossible had it been necessary for each D/F receiver to search for the traffic with a dial.

16. The reporting center had the direct responsibility for alerting all organizations in Germany proper when a raid could be expected. This was done directly, by telephone, using abbreviation codes and cover names. Contact was maintained with day and night fighter commands, as well as with the Navy, Army, anti-aircraft artillery, and civil defense. According to Ruckheim, he had the responsibility of deciding which raid was likely to be serious enough to warrant sending up fighters from Germany's limited store. This was decided almost entirely from signal intelligence information.

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The watch officer of the reporting center was the man who actually gave the command for the fighters to take off and told them where they would find their enemy.

17. Liaison: In regard to liaison between the signal intelligence service and the remainder of the Air Force, both men thought it had been good on a tactical level. They knew nothing of high level liaison at Berlin, but thought, on general principle, that it had probably not been effective. Liaison officers, belonging to the signal intelligence battalion, were attached to Air Fleet headquarters and to units as far down as group and wing. From reports received from these officers, Ruckheim deduced that the flying units thought highly of information derived from intercepts. Flying officers were also, from time to time, attached to the reporting center to familiarize themselves with its techniques. This was done with the double purpose of signal intelligence appreciation and communications security training. In regard to the latter, Ruckheim did not believe he had been too successful, and said that he was certain that German fliers were guilty of most or all of the breaches of security of which Allied fliers were guilty.

18. There was no technical liaison between the signal intelligence service of the Luftwaffe and the Army, Navy or Forschungsamt, according to Ruckheim. He knew, of course, that these organizations were engaged in signal intelligence, but knew nothing of their achievements and very little of their organization. There were some privately made contacts with field units of the Army and Navy, but these were never brought to official notice. Schraplau stated that he was able to get equipment from Army and Navy supply sources when he could not get it through his regular channels, and in particular obtained some receivers from the Navy that he thought were better in some respects than his regular sets. Ruckheim stated that it was possible to get skilled operators transferred from service to service with very little trouble, and that he received such men from both Army and Navy. He did not know whether there had been any administrative problems connected with this, but he recalled none. Both men thought the tactical signal intelligence of the Air Force was the best organized of all.

19. Goering's interest in and close connection with tactical air signal intelligence dated from late 1942 or early 1943. He visited Ruckheim's headquarters frequently, and learned a great deal about the actual operating work. Ruckheim had a very high opinion of Goering's intelligence and claimed that, although not a technical man in any sense, Goering had a very quick grasp of things, and knew the principles by which signal intelligence worked. Later in the war, when Allied raids became more frequent and heavier, Goering assumed a personal, overall control of the German air defense effort, and always wanted to be kept informed of the progress of raids, what defense measures were being undertaken and what targets were under attack. This information was apparently for planning purposes, for Ruckheim stated that he never knew of an instance in which Goering actually interfered in tactical operations while they were under way. Contact between Ruckheim and Goering was direct, by telephone in the clear. Ruckheim would place a call to Berlin on

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nights when activity was significant, and the Reichpost gave it "Blitz" priority, the highest in Germany.

20. Hitler had also been a visitor and had expressed interest in the work, but had never taken the time to acquaint himself with the principles of operation. Ruckheim felt that Hitler's personal command of the German military machine was an unmitigated disaster for Germany as he gave no impression of understanding modern war, or modern air war at any rate. Martin Bormann, Hitler's lieutenant, was a more frequent visitor to the reporting center. Like Goering, Bormann acquired considerable knowledge of the techniques and expressed great interest in them.

21. General: When Ruckheim was queried as to his opinions on Allied operations and what Allied actions contributed most to the success of the German signal intelligence effort, he replied at some length. In addition to carelessness in leaving IFF and radar devices on when not needed, a habit which he attributed more to Americans than the British, he thought both air forces would have to give thought to the practice of giving navigation instructions in ground-to-air or air-to-air traffic. Most large raiding flights carried navigators and equipment in lead planes only, and other planes of the flight were constantly requesting and getting from the lead plane information as to their location, their direction, and other data. This furnished the Germans with a running account of the flight, strength, intent, etc. Sometimes German D/F equipment would show that the Allied navigators were in error in their reckoning. In those instances Ruckheim was glad his intercept operators had no transmitters available, or the temptation to radio correct positions would have been considerable. Another Allied practice that might have been extremely costly if the Germans had had more fighter bombers or fast attack bombers, was the carrying on of extensive tower to plane traffic. This was charted and always rose to a peak at the point of take-off or landing. If the Germans had had suitable planes it would have been easy to dispatch small groups to attack the formations of heavy planes at the moment of take off or landing, when they were almost helpless. In this connection the development of additional ground control equipment merely means more traffic to monitor and a more sure knowledge of enemy operations. Ruckheim expressed the opinion that the current air lift to Berlin provided a wonderful opportunity for the Soviet to monitor British and American air field procedure and traffic and to build up experience in traffic patterns. When asked if he thought this was being done, he disclaimed any knowledge of current signal intelligence trends anywhere, but stated that he knew that some German personnel familiar with Luftwaffe practices were in Russian hands.

22. Both Ruckheim and Schraplau were unwilling to discuss personalities by name. They appeared to believe that to disclose what they knew of persons who had worked in their organization would subject those people to unwanted interrogation. They did disclose that some members of their former organization are living in Heiligenstadt, a small town in the extreme southeastern tip of the British zone of occupation. In an unguarded moment, Schraplau indicated that members

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of the organization keep in close touch with each other, and went on to say that it was very probable that when the new West German state is established, as is expected fairly soon, it will want to undertake some "observations" of traffic in its territory, and it would be wrong to compromise the persons who might be engaged for this work. This is the first indication that has come to this headquarters of any intent on the part of the Germans to resume signal intelligence activities.

23. Both Ruckheim and Schraplau attempted to draw the interrogator out as to whether the United States had any information on new developments in the signal intelligence services of South American countries, notably Argentine. Schraplau implied that he had heard that certain German experts in this field had left Germany for that country, and were in all probability assisting in setting up or revamping intercept activities there. He refused to be more specific when pressed on this point.

24. In addition to information about the later development of the signal intelligence service of the Luftwaffe, Ruckheim also disclosed one or two earlier achievements which have some historical interest. In August 1939, he was sent with an intercept platoon to the borders of Poland to locate Polish air fields and estimate their capacity and condition. He took three weeks at the job, turning in a detailed report on the Polish Air Force, its numbers and location, and some information as to its plan of defense. This was used a week later by the German Air Force to smash the Polish force to the ground in two days. The job was done largely by direction finding, although the Polish air cipher was read without difficulty.

25. Another signal intelligence achievement with repercussions was the monitoring of British air traffic over Holland in 1940 while Holland was still neutral. The German government protested to the Dutch over alleged British air violations of Dutch neutrality. The Dutch rejected the protest as being unfounded, at which the Germans were able to demonstrate that British planes had flown over the country, and could cite precise places and times. Ruckheim believes that this had some weight in the German decision to invade Holland at the time of the May 1940 offensive.

26. Shortly before the interviews terminated, Ruckheim stated that at the close of the war he and the remnants of his unit were located at Innsbruck, Austria. Before they turned in to an American POW camp, he gathered together a few documents and turned them over, with instructions to conceal them and hold them, to someone he knew who lived in the area. These included his "guest book" or registry of all persons, other than regular personnel, who had access to his operations area. Among the signers are Goering, Hitler, and many other prominent German personalities. Other documents include diagrams showing the charting of a typical Allied air raid from the early interception of air field traffic to the assembly, the flight, the attack, the return and the landing. Ruckheim believed that this material would be of

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historical interest to the United States and Great Britain, but saw no way to retrieve it from Innsbruck, which is in the French Zone of Austria. He did not wish to write to his friend because he was certain that the mail was being intercepted. He stated that if the United States could retrieve these items, he would have no objection to photographs being made.